

WHAT IS CLAIMED IS:

1. A method for insulating or thermally protecting a rocket motor assembly comprising a rocket motor casing, a propellant, and a nozzle assembly, said process comprising (a) forming a rocket motor ablative material from a prepreg comprising at least one impregnating resin matrix and a reinforcement comprising, as a precursor prior to carbonization, at least one aromatic polyamide and (b) insulating or lining a portion of the rocket motor assembly with the rocket motor ablative material.

2. The method of claim 1, wherein the reinforcement comprises carded and yarn-spun staple aramid fibers.

3. The method of claim 1, wherein the reinforcement comprises yarn-spun aramid filaments.

4. The method of claim 1, wherein the reinforcement comprises at least one member selected from the group consisting of aramid felt and aramid flock.

5. The method of claim 1, wherein said insulating or lining of a portion of the rocket motor assembly comprises applying the ablative material as a bulk ablative material of an exit nozzle liner.

6. The method of claim 1, wherein said insulating or lining of a portion of the rocket motor assembly comprises applying the ablative material as a bulk ablative material of a reentry vehicle nose cone.

7. A method for insulating or thermally protecting a rocket motor assembly comprising a rocket motor casing, a propellant, and a nozzle assembly, said process comprising (a) forming a rocket motor ablative material from a prepreg comprising at least one impregnating resin matrix and a reinforcement comprising, as a precursor prior to carbonization, at least one poly(meta-arylaramid) and (b) insulating or lining a portion of the rocket motor assembly with the rocket motor ablative material.

8. The method of claim 7, wherein the reinforcement comprises carded and yarn-spun staple aramid fibers.

9. The method of claim 7, wherein the reinforcement comprises yarn-spun aramid filaments.

10. The method of claim 7, wherein the reinforcement comprises at least one member selected from the group consisting of aramid felt and aramid flock.

11. The method of claim 7, wherein said insulating or lining of a portion of the rocket motor assembly comprises applying the ablative material as a bulk ablative material of an exit nozzle liner.

12. The method of claim 7, wherein said insulating or lining of a portion of the rocket motor assembly comprises applying the ablative material as a bulk ablative material of a reentry vehicle nose cone.